

C L A I M S

1. A detector for detecting a state on a
2 detection surface, characterized by comprising:
3 a prism which includes a first surface as a
4 detection surface;
5 light-emitting means for applying light to the
6 detection surface through an interior of said prism;
7 light-receiving means for receiving reflected
8 light of light applied from said light-emitting means to
9 the detection surface; and
10 state detection means for detecting a state on
11 the detection surface on the basis of the reflected
12 light received by said light-receiving means.

2. A detector for detecting a state on a
2 detection surface according to claim 1, characterized by
3 further comprising a mirror which reflects specular
4 reflection of light applied from said light-emitting
5 means to the detection surface and returns the light to
6 the detection surface through the interior of said
7 prism,
8 wherein said light-receiving means receives
9 the specular reflection of the light from the detection
10 surface, as the reflected light, which is returned by
11 said mirror.

3. A detector for detecting a state on a
2 detection surface according to claim 1, characterized by
3 further comprising

4 cooling means for cooling said prism, and
5 a mirror which reflects specular reflection of
6 light applied from said light-emitting means to the
7 detection surface and returns the light to the detection
8 surface through the interior of said prism,
9 wherein said light-receiving means receives
10 the specular reflection of the light from the detection
11 surface, as the reflected light, which is returned by
12 said mirror, and
13 said state detection means detects moisture
14 produced on the detection surface of said prism which is
15 cooled by said cooling means, on the basis of the
16 specular reflection received by said light-receiving
17 means.

4. A detector for detecting a state on a
2 detection surface according to claim 1, characterized in
3 that said light-receiving means receives the specular
4 reflection of the light from the detection surface, as
5 the reflected light, which is applied from said
6 light-emitting means.

5. A detector for detecting a state on a
2 detection surface according to claim 1, characterized by
3 further comprising cooling means for cooling said prism,
4 wherein said light-receiving means receives
5 the specular reflection of the light from the detection
6 surface, as the reflected light, which is applied from
7 said light-emitting means, and

8 said state detection means detects moisture
9 produced on the detection surface of said prism which is
10 cooled by said cooling means, on the basis of the
11 specular reflection received by said light-receiving
12 means.

6. A detector for detecting a state on a
2 detection surface according to claim 1, characterized by
3 further comprising
4 a mirror which reflects specular reflection of
5 light applied from said light-emitting means to the
6 detection surface and returns the light to the detection
7 surface through the interior of said prism, and
8 cooling means, provided on a second surface of
9 said prism which serves as an incident surface of light
10 from said light-emitting means and an exit surface of
11 light to said light-receiving means, for cooling said
12 prism,
13 wherein said light-receiving means receives
14 the specular reflection of the light from the detection
15 surface, as the reflected light, which is returned by
16 said mirror, and

17 said state detection means detects moisture
18 produced on the detection surface of said prism which is
19 cooled by said cooling means, on the basis of the
20 specular reflection received by said light-receiving
21 means.

7. A detector for detecting a state on a

2 detection surface according to claim 1, characterized by
3 further comprising
4 a mirror which reflects specular reflection of
5 light applied from said light-emitting means to the
6 detection surface and returns the light to the detection
7 surface through the interior of said prism, and
8 cooling means, provided on a second surface of
9 said prism which serves as an incident surface of light
10 from said light-emitting means and an exit surface of
11 light to said light-receiving means, for cooling said
12 prism,
13 wherein said light-receiving means receives
14 the specular reflection of the light from the detection
15 surface, as the reflected light, which is returned by
16 said mirror,
17 said state detection means detects moisture
18 produced on the detection surface of said prism which is
19 cooled by said cooling means, on the basis of the
20 specular reflection received by said light-receiving
21 means,
22 said cooling means comprises a thermoelectric
23 cooling element with one surface serving as a
24 low-temperature-side surface and the other surface
25 serving as a high-temperature-side surface,
26 said thermoelectric cooling element is placed
27 so as to make the low-temperature-side surface serve as
28 a second surface side of said prism,

29 a heat dissipation member is mounted on the
30 high-temperature-side surface of said thermoelectric
31 cooling element, and
32 said light-emitting means and said
33 light-receiving means are provided so as to extend
34 through said thermoelectric cooling element and said
35 heat dissipation member.